

Focus. . . Trends in Cancer Mortality

Cancer mortality in Missouri increased by 2.5 percent between 1985 and 1995 rising from an age-adjusted rate of 135.0 deaths per 100,000 population in 1985 to a rate of 138.4 deaths in 1995. In 1985 malignant neoplasm was the cause of death to nearly 1 out of 5 deceased persons compared to slightly more than 1 out of 4 in 1995. Cancer has been the second leading cause of death in Missouri for over a half century.

This article focuses on the changes in Missouri cancer mortality from 1985 to 1995. A recent national study¹ found a decrease in cancer mortality for the United States of 3.9 percent for the period 1990 to 1995 which reversed a long term increasing trend. Missouri data does not show this dramatic change but it is consistent in that all of the 2.5 percent mortality increase in Missouri occurred from 1985 to 1989 with little change since 1989. Generally Missouri cancer mortality is slightly higher than the United States as provisional 1995 data shows a 5 percent differential. Higher smoking rates in Missouri may explain this differential.

The primary reason for this 1985-1995 increase according to Table 1 is the increase in respiratory cancer mortality. The age-adjusted rate increased 12.7 percent between 1985 and 1995 from a low in 1985 of 41.1 deaths per 100,000 population to 46.3 in 1995. One in three cancer deaths are respiratory. According to the formula² used to calculate deaths attributed to smoking 80 percent of lung cancer deaths are included in this formula. According to the November 1995 edition of Missouri Monthly Vital Statistics this increase could be due to the increase in smoking-related deaths. Table 1 also shows that most of the other categories of cancer mortality have in fact declined except for female breast cancer which shows only a slight increase and urinary organs which has generally remained the same over this 11 year period, although, there was a 2 percent increase between 1985 and 1995.

The age specific cancer mortality rates for persons under 65 years of age show a decrease for each age specific group between 1985 and 1995. The decreases were sharpest for the youngest ages. For children under age 5, the cancer death rate decreased 36.7 percent from 3.0 per 100,000 population in 1985 to 1.9 in 1995. All three over 65 age groups had increases in cancer mortality with the largest increases noted for 65-74 and 75-84 age groups. This may reflect longer survival rates for persons diagnosed with cancer before age 65. Females generally have a smaller percent decrease than the males in those age groups under 65. The female age groups greater than 64 had a greater increase in cancer mortality than the same age groups for males.

The age adjusted cancer death rate between 1985 and 1995 for Missouri males decreased by 0.7 percent while the rate for females increased 5.9 percent. Table 2 shows an overall larger decline in cancer deaths among men than women in those age groups that have a decline. Despite this decline for males, the age adjusted cancer death rate is still nearly 45 percent higher for males than for females. In the age groups 65 and over, there is a greater increase in cancer deaths among women than men. The cause of this may be that women who are now in this age group began to smoke in larger numbers around the period of World War II and are, by way of higher cancer death rates showing the effects of that social trend now.

The age adjusted cancer mortality rate for blacks is higher than for whites. In 1995, the mortality rate for blacks and whites were 187.2 and 134.5, respectively. However, this differential is narrowing as there was a small decrease in the black rate of 2.9 percent versus a 2.4 percent increase in the white rate.

The map on the opposite page presents age adjusted cancer death rates by county in Missouri during the time period 1985-1995. The age adjusted mortality rate for the state was 137.7 deaths per 100,000 population, while county rates ranged from 102.7 in Johnson County to 179.5 in the City of St. Louis. Most of the counties in the highest quartile are located in the southeastern portion of the state. These include counties in the Bootheel areas as well as counties such as Madison Bollinger Butler Iron and Carter. The Northeastern portion of the state had only one county in the highest quartile Pike. The inner urban counties on each end of the state both had cancer rates in the highest quartile as well. Jackson and St. Louis City had rates of 142.8 and 179.5 respectively.

It is estimated that about two thirds of cancer deaths can be linked to tobacco use poor diet obesity and lack of exercise. The most significant of these behavioral factors and the one contributing greatest to the increase in cancer death in Missouri is smoking. New treatments have extended the life of some cancer patients. However a more effective approach to combating the disease is to practice healthy lifestyles which prevents its occurrence.

References:

1 Cole R. and Rodu B. Declining Cancer Mortality in the United States *Cancer* Nov. 15, 1996.

2 Unpublished communication from Michigan Department of Public Health based on reports from Surgeon General 1985.

Table 1
Age-Adjusted Mortality Rates per 100,000 Population of Selected Categories
of Malignant Neoplasms by Year

	<i>Digestive Organs</i>	<i>Respiratory System</i>	<i>Female Breast</i>	<i>Genital Organs</i>	<i>Urinary Organs</i>	<i>Leukemia</i>	<i>Other</i>	<i>Total</i>
1985	29.5	41.1	22.5	12.9	5.0	5.1	28.9	135.0
1987	28.6	43.3	24.5	12.5	5.0	5.3	27.7	135.8
1989	28.3	45.0	23.3	13.2	5.1	5.1	29.2	139.8
1991	28.6	45.4	23.1	12.9	4.9	5.3	29.7	139.5
1993	30.7	46.9	20.1	12.6	5.3	5.0	28.2	139.8
1995	29.2	46.3	22.7	12.9	5.1	4.8	27.8	138.4
Percent Change	-1.0	12.7	0.9	0.0	2.0	-5.9	-3.8	2.5

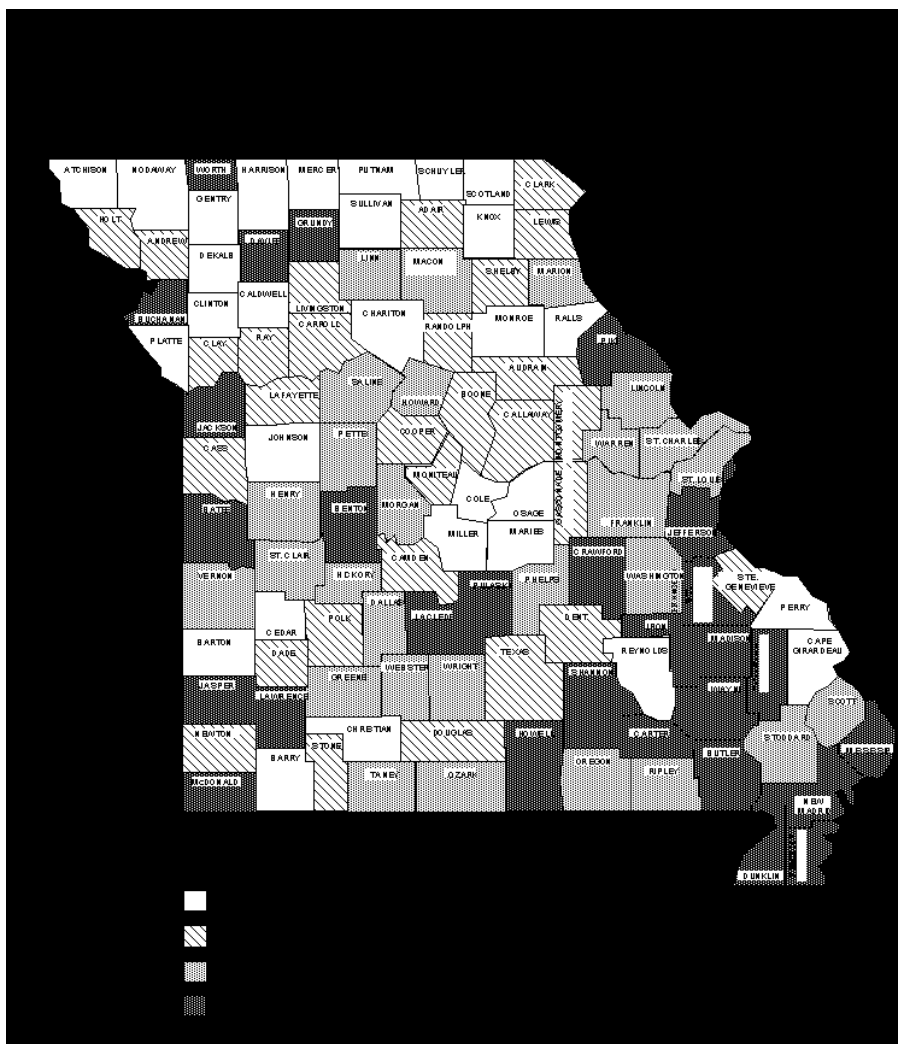
Table 2

1985-1995 Missouri Resident Age-Specific Cancer Mortality Rates per 100,000 Population by Gender

<i>Males</i>	<i>LT5</i>	<i>5-14</i>	<i>15-24</i>	<i>25-34</i>	<i>35-44</i>	<i>45-54</i>	<i>55-64</i>	<i>65-74</i>	<i>75-84</i>	<i>GT84</i>	<i>Number of Deaths</i>	<i>Age-Adjusted Rate</i>
1985	3.2	4.1	7.1	14.5	40.3	181.6	584.4	1103.0	1798.8	2355.0	5,781	169.6
1987	4.3	4.7	6.2	9.3	40.1	167.9	552.7	1124.0	1898.8	2295.2	5,870	167.2
1989	6.9	2.7	6.0	12.7	42.4	171.7	590.8	1103.4	1985.2	2647.6	6,186	172.8
1991	3.1	3.4	5.8	13.0	36.9	175.9	565.7	1208.9	1888.6	2581.1	6,263	173.6
1993	3.1	4.3	5.0	11.3	40.6	173.4	567.5	1204.2	2014.2	2672.4	6,537	175.9
1995	3.2	2.8	6.2	11.3	37.5	151.2	547.1	1196.1	1869.4	2702.5	6,419	168.4
Percent Change	0.0	-31.7	-12.7	-22.1	-6.9	-16.7	-6.4	8.4	3.9	14.8	11.0	-0.7
<i>Female</i>	<i>LT5</i>	<i>5-14</i>	<i>15-24</i>	<i>25-34</i>	<i>35-44</i>	<i>45-54</i>	<i>55-64</i>	<i>65-74</i>	<i>75-84</i>	<i>GT84</i>	<i>Number of Deaths</i>	<i>Age-Adjusted Rate</i>
1985	2.8	1.4	3.7	15.1	52.0	164.7	378.9	619.2	914.6	1276.5	4,963	110.0
1987	4.5	2.3	3.1	12.0	50.7	165.9	400.8	661.5	908.7	1360.4	5,203	113.6
1989	1.7	3.4	3.0	10.8	49.9	158.0	385.3	685.9	1022.8	1347.4	5,427	114.2
1991	2.7	3.3	3.6	12.5	47.9	160.7	397.1	677.2	1001.3	1381.5	5,563	114.9
1993	0.5	2.7	3.4	13.5	41.8	153.9	392.1	683.4	1029.7	1391.1	5,655	113.5
1995	0.6	1.3	3.3	12.8	49.0	161.5	378.2	738.9	1007.1	1489.6	5,900	116.5
Percent Change	-78.6	-7.1	-10.8	-15.2	-5.8	-1.9	-0.2	19.3	10.1	16.7	18.9	5.9
<i>Total</i>	<i>LT5</i>	<i>5-14</i>	<i>15-24</i>	<i>25-34</i>	<i>35-44</i>	<i>45-54</i>	<i>55-64</i>	<i>65-74</i>	<i>75-84</i>	<i>GT84</i>	<i>Number of Deaths</i>	<i>Age- Adjusted Rate</i>
1985	3.0	2.8	5.4	14.8	46.3	172.9	475.1	828.5	1238.3	1580.3	10,745	135.0
1987	4.4	3.6	4.6	10.7	45.5	166.9	472.1	864.8	1268.4	1625.7	11,073	135.8
1989	4.4	3.1	4.5	11.8	46.2	164.4	481.8	870.3	1380.2	1697.4	11,613	138.8
1991	2.9	3.3	4.7	12.7	42.5	168.0	476.9	910.4	1326.7	1699.3	11,826	139.5
1993	1.9	3.5	4.2	12.4	41.2	163.3	475.4	913.9	1395.6	1727.4	12,192	139.8
1995	1.9	2.1	4.8	12.1	43.4	156.5	458.6	942.7	1332.7	1810.0	12,319	138.4
Percent Change	-36.7	-25.0	-11.1	-18.2	-6.3	-9.5	-3.5	13.8	7.6	14.5	14.6	2.5

Rates are per 100,000 population.

Age-adjusted rates use 1940 U.S. population as the standard.



Provisional Vital Statistics for October 1996

Live births increased in October as 7,858 Missouri babies were born compared with 6,794 one year earlier. The birth rate increased from 14.2 to 17.3 per 1,000 population for these time periods.

Cumulative births show slight increases for the 10- and 12-month periods ending with October. For January to October, births totaled 63,081 compared with 62,107 one year earlier.

Deaths increased slightly for all three time periods shown below as 4,599 Missourians died in October compared with 4,456 in October 1995.

The **Natural increase** for Missouri in October was 3,259 (7,858 births minus 4,599 deaths). The natural increase in 1996 was higher than the previous year for all three time periods shown below.

Marriages increased in October, but decreased for the cumulative 10- and 12-month periods ending with October.

Dissolutions of marriage decreased in October but increased for the two cumulative periods.

Infant deaths increased in October, but the rates show little change for January-October and November-October.

PROVISIONAL RESIDENT VITAL STATISTICS FOR THE STATE OF MISSOURI

Item	October				Jan.- Oct. cumulative				12 months ending with October				
	Number		Rate*		Number		Rate*		Number		Rate*		
	1995	1996	1995	1996	1995	1996	1995	1996	1995	1996	1994	1995	1996
Live Births	6,794	7,858	14.2	17.3	62,107	63,081	14.0	14.1	73,799	74,549	14.3	13.9	13.9
Deaths	4,456	4,599	9.3	10.1	44,881	45,266	10.1	10.1	53,729	54,254	10.2	10.1	10.1
Natural increase	2,338	3,259	4.9	7.2	17,226	17,815	3.9	4.0	20,070	20,295	4.1	3.8	3.8

Marriages	4,132	4,490	8.6	9.9	38,776	38,572	8.7	8.6	45,096	44,853	8.5	8.5	8.4
Dissolutions	2,375	2,247	5.0	5.0	21,583	22,334	4.9	5.0	25,943	26,477	5.0	4.9	5.0
Infant deaths	40	54	5.9	7.7	457	468	7.4	7.4	569	564	7.9	7.7	7.6
Population base (in thousands)	...	...	5,324	5,352	...	...	5,324	5,352	...	...	5,267	5,312	5,345

*Rates for live births, deaths, natural increase, marriages and dissolutions are computed on the number per 1000 estimated population. The infant death rate is based on the number of infant deaths per 1000 live births. Rates are adjusted to account for varying lengths of monthly reporting periods.

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